

REMARKS

The Supplemental Office Action dated August 22, 2003 has been received and its contents carefully noted. Applicants respectfully request entry of the above amendments in response thereto. The following comments are offered on the cited prior art and it is trusted that they will be persuasive in bringing about a favorable reconsideration and allowance of the existing claims.

DRAWINGS

New drawing Figures 2 and 3 have been submitted. The new drawing Figures 2 and 3 are fully supported in the specification and no new matter is entered by way of the new drawings. The drawings provide further support of and show the features of the claimed invention. Applicants respectfully submit that the objection under 37 CFR 1.83(a) is overcome and request withdrawal of the objection and acceptance of the drawing figures.

Claim Rejections - 35 U.S.C. §112

The Examiner rejects claim 18 under 35 U.S.C. § 112, first paragraph asserting the claim contains subject matter not described in the specification to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention at the time the application was filed. The Examiner asserts that the phrase of claim 18, lines 8-12,

“said electrical power means further comprising control means for illuminating automatically without operator intervention said EL panel stripe from a non-illuminated state to an illuminated state for a predetermined designated lighting area of the one or more conventional lighting system areas within the building in response to an emergency input triggering event.”

is not described in the specification and the absence of this teaching in the original specification constitutes a new matter.

Applicants respectfully disagree with the Examiner's assertion and request withdrawal of the rejection of claim 18 under 35 U.S.C. §112 for at least the following cogent reasons. Applicants submit that a person skilled in the relevant art would have no difficulty in understanding the teachings of the original specification to carryout the invention as claimed.

Applicants specify and disclose in the specification at page 7, lines 13-15 that a "suitable EL power supply for use in the emergency lighting system of the present invention from E-Lite Technologies, Inc., assignee of the present invention". The EL power supply is shown on the drawing and is designated 70. It is clear from the specification and drawing that the EL power supply 70 receives AC power at its AC voltage inputs 80, 82 which are electrically connected to the AC power input terminals 12, 14. The EL power supply 70 provides a voltage across its output terminals 76, 78 which are connected to the EL lamp 100 to power the EL lamp to cause it to illuminate (i.e. from a non-illuminated state to an illuminated state) when an appropriate control signal is provided. (page 7, lines 5-8). The control signal results from triggering events such as a fire alarm, smoke detection, sprinkler head operation and the like (page 5, lines 29-30) to automatically illuminate the EL panel stripe from a non-illuminated state to an illuminated state by definition without operator intervention directly from the triggering event.

It is also clear from the specification and drawings that when AC power is lost, the system automatically switches to DC operation to connect the batteries 16, 18 to the DC-DC converter 60 which has its output leads 66, 68 electrically connected to the DC input leads 72, 74 of the EL power supply 70 which powers the EL panel lamp 100 from a non-illuminated state to an illuminated state (page 6, lines 28-31 to page 7, lines 1-4).

It is also clear from the specification and drawings that the emergency lighting system provides illumination in accordance with code requirements (UL 924 and UL 1994) page 1, line 16, within the associated room or area that has lost its power rather than the entire building (page 2, lines 20-23). The line side of the switch controlling power to the general lighting within an associated room, corridor or other building area, i.e. one or more conventional lighting systems areas, whether the lights are on or off, and in the event of an AC power failure illuminates automatically without operator intervention the EL lamp from a non-illuminated state to an illuminated state in the associated room or area in accordance with code requirements, i.e. the predetermined designated lighting area (page 2, line 15-23).

The predetermined area is designated 160 in the drawing and is described in the specification as filed at page 9, lines 17-26, in the Abstract of the Disclosure, and claim 1 as originally filed.

Applicants submit that a person skilled in the art would know to look at the power supply specified by E-Lite Technologies, the assignee of the present invention for carrying out the features of the invention and any particulars regarding the power supply. Further, a person skilled in the art would look to specification data sheets available from E-Lite Technologies for the power supply (see Exhibit A) and would clearly understand the teaching of the present invention.

The original specification clearly directs the reader to look to "a suitable power supply available from E-Lite Technologies, the assignee of the present invention. The original specification clearly points out and describes what a person skilled in the art must do to practice the invention. In addition to the specification data sheets for the power supply described in the specification, a person skilled in the art would look to issued patents, for example, US Patent Nos., 6,043,609 and 6,304,039 owned by E-Lite Technologies, the assignee of the present invention, for further information on a power supply and control circuit for illuminating an electroluminescent panel to meet the code requirements specified by UL 924 and UL 1994. The power supply specification data sheets and above referenced patents were available at the time the present invention was made.

Applicants submit that the original specification is sufficiently enabling for a person skilled in the art to practice the invention without undue experimentation at the time of filing the present application. Applicants further submit that the scope of claim 18 is commensurate with the scope of the disclosure in the original specification.

Applicants respectfully submit that the rejection of claim 18 under 35 U.S.C. §112, first paragraph is overcome and request the withdrawal of the rejection for at least the above reasoning.

Claim Rejections - 35 U.S.C. §103

Turning now to the rejections under 35 U.S.C. § 103(a), claims 18 and 35 have been rejected as being obvious in view of Kim et al. (U.S. Patent No. 6,265,833). To reject claims 19-22, the teachings of Gross et al. (U.S. Patent No. 5,343,375) are added to Kim et al. on the grounds of obviousness. In rejecting claims 23 and 24, the Examiner alleges that it would be obvious to combine the teachings of Herzog (U.S. Patent No. 3,869,639) with the Kim et al. teachings. Applicants respectfully disagree with these rejections for the following cogent reasons.

The Kim et al. patent describes a panel 5 for displaying characters, numbers, figures and the like (see col. 5, lines 59-63, col. 6, lines 17-21) wherein the intensity of the displayed characters is increased or decreased depending on the intensity of the outside light (see col. 5, lines 37-40) in which a device containing the panel is used. A sensor 1 senses the intensity of the light (see col. 5, lines 29-31) and provides a control signal for selecting a driving voltage and current to drive the display at a given intensity (see col. 5, lines 33-36) in accordance with a number of preset driving modes (see col. 6, lines 51-67, col. 7, lines 1-10). The intensity of the display only changes within a range of intensities from low intensity in low lit areas to high intensity in highly lit areas. Kim et al. do not disclose a source of direct current (DC) voltage 16, 18 or means 60, 70 electrically coupled to the DC voltage source 16, 18 for providing electrical power to the EL panel strip 100 or control means 22, 70, for illuminating the EL panel 100 without operator intervention from a non-illuminated state to an illuminated state of one or more conventional lighting system areas 160 within the building in response to an emergency input triggering event. Kim et al. do not disclose an EL power supply having an input 80, 82 coupled to the commercial AC power line side 12, 14 of an electrical switch in the conventional lighting designated area and to a DC voltage source 60 in the absence of the AC power at the line side of the electrical switch. Accordingly, the Kim et al. patent is deficient with respect to at least the limitations found in subparagraphs (b), (c) and (e) of claim 18 and subparagraphs (c) and (d) of claim 35.

Applicants further submit an artisan skilled in the art would not turn to Kim for a teaching on providing emergency lighting in a predetermined designated area normally lit by AC

powered conventional lighting using an electroluminescent (EL) panel wherein the EL panel automatically changes from a non-illuminated state to an illuminated state in response to an emergency triggering event such as an AC power failure. The Kim patent teaches that the device always provides a driving current and voltage to the panel (5), column 5, lines 44-48, accordingly the controller 3 is always operative and provides a driving voltage and current, column 5, lines 49-67, column 6, lines 1-17. Accordingly, the Kim patent teaches that the power supply (controller 3) is always on and only the driving current and voltage is changed to increase or decrease the back lighting of the display. Kim et al. do not disclose operation in response to a must fail-safe emergency input triggering event of the type in which the input triggering event or input stimulus is a signal from a smoke detector, pull alarm, power failure, or other such alarm type signal. Applicants' invention provides illumination for emergency egress and proper illumination at the floor level in accordance with emergency lighting code requirements (UL 924 and UL 1994). There is no teaching, suggestion or disclosure in Kim et al. to provide illumination of a predetermined designated lighting area within the building and response to an emergency input triggering event. Accordingly, the Kim et al. patent is deficient with respect to at least the limitations found in claims 19, 20, 21 and 22 of the present application.

In attempting to correct the deficiencies of the Kim et al. patent, the Examiner alleges it would be obvious to combine the teachings of Gross to provide Kim et al. with the ability to illuminate a predetermined designated lighting area with low level path marking indicating a visual delineation of the path of egress wherein the EL panel stripe is of indeterminate length located on a floor and on a wall at or near the floor in the predetermined designated lighting area of the one or more lighting areas in accordance with emergency lighting code requirements and further wherein the EL panel stripe is illuminated to light an exit sign at or near the floor in accordance with emergency code requirements. The Gross et al. patent discloses a lighting strip of individual LED's connected together wherein the LED's are of a specific configuration (column 5, lines 13-22) wherein the strip of LED's are powered by a suitable DC power supply the size of which is dependent on how many and what power LED's are connected to it, column 5, lines 23-30, wherein each leg of the LED is attached to a separate conductor 54a and 54b which carries DC power to light the LED's. Gross et al. do not suggest or disclose an electroluminescent (EL) panel strip. Also there is no reference that the Gross et al. LED strip can be used as a panel (5) in the Kim et al. device nor is there a suggestion, disclosure or

motivation to modify Kim et al. to use the Gross et al. LED strip. In addition, Gross et al. requires two LED strips to provide complete emergency egress coverage which results in 27 LED's per foot at a power consumption of 13 milli amps per LED. The power requirement is 0.35 amps per foot and a 300 foot system would require 105 amperes which would make the conductors to which the LED leads are connected of impractical requiring 0000 gage conductor to carry the required current and such a current carrying conductor is limited to 100 feet to maintain a 2% voltage drop. Moreover, the LED's are required to be spaced at 1/2 inch intervals to provide his lighting strip. The high current is impractical which dictates that the Gross et al. strip is limited to lengths of less than 20 feet per strip. If the LED's were connected in series in order to alleviate the high current problem, a more serious problem arises wherein the failure of any one LED will blank out the entire section of the LED lamp strip. Further, the Gross et al. 300 foot LED strip, if such a strip could be made, would contain approximately 8,100 LED's with 16,200 electrical connections. Applicants' electroluminescent (EL) panel strip requires two connections. Moreover, Applicants' electroluminescent (EL) panel strip consumes approximately 0.75 amperes for an equivalent length system. For all these reasons, it is therefore unlikely that the artisan of ordinary skill in the field of emergency lighting would use the Gross et al. LED strip in combination with the Kim et al. panel (5) for displaying characters, numbers, figures and the like wherein the intensity of the displayed characters is increased or decreased depending upon the intensity of the outside light in which a device containing the panel is used.

In the present invention, the electroluminescent (EL) panel strip permits the lamp to be several hundred feet long with particularly low current and yet provide uniformed brightness along its entire length and width to provide the required illumination intensity at the floor level in accordance with the UL 924 and UL 1994 code requirements. In addition, the electroluminescent (EL) panel strip of the invention is of indeterminate length, that is, the length is of any length up to the maximum length to accommodate the distance of the designated lighting area with which it is used to provide the required illumination and path of egress and lighting of an exit sign at or near the floor in accordance with the emergency lighting code requirements. In addition, an artisan of ordinary skill would not necessarily find it obvious from the teachings of Gross et al. to the panel 5 of Kim et al. which has a driving voltage and current supplied by the controller 3 in accordance with predetermined step levels to increase or decrease the intensity of the display panel 5 since there is no teaching, suggestion or disclosure in Gross

et al. that the intensity levels of the LED's forming the lamp strip can be varied. Accordingly, the Gross et al. patent in combination with the Kim et al. patent does not cure the deficiencies of the Kim et al. patent with respect to at least the limitations found in subparagraphs b), c) and e) of claim 18 and subparagraphs c) and d) of claim 35.

In attempting to correct the deficiencies of the Kim et al. patent, the Examiner alleges it would be obvious to combine the teachings of Herzog to provide Kim et al. with an EL power supply having an input coupled to the line side of an electrical switch supplying commercial AC power to the conventional lighting located in the designated area and to the DC voltage source in the absence of AC power at the line side of the electrical switch. The Herzog patent discloses a system for operating a gas tube flash lamp to overcome the problem of short life when the lamps are turned completely off and on repeatedly by always operating the lamp in a normal bright mode when the line voltage is normal and a dim bright flashing mode when the line voltage fails. Accordingly, the power is always supplied to the same gaseous discharge lamp. There is no suggestion, disclosure or teaching that an electroluminescent (EL) panel strip provides the required illumination and changes from a non-illuminated state to an illuminated state to replace the light of the conventional lighting system in response to an emergency input triggering event. Moreover, the Herzog patent teaches driving a gaseous discharge tube at a reduced current during an emergency condition and at a full current when the AC power is normal. Accordingly, the Herzog patent does not cure the deficiencies of the Kim et al. patent with respect to at least the limitations found in subparagraphs b), c) and e) of claim 18 and subparagraphs c) and d) of claim 35. It is respectfully submitted that the artisan of ordinary skill in the electroluminescent (EL) panel art would not look to the gaseous tube discharge art to find an electroluminescent (EL) panel stripe operating from a non-illuminated state to an illuminated state for a predetermined designated lighting area of one or more conventional lighting system areas within the building in response to an emergency input triggering event.

In addition to the above, the various applied prior art references offer no teaching which would prompt the artisan of ordinary skill to make the combinations/modifications proposed by the Examiner. In fact, it is only when the Examiner looks to applicants' own disclosure that he can allege obviousness by choosing bits and pieces of the prior art references and then combining these bits and pieces together based on alleged obviousness. Without a teaching (other than applicants' own teaching) to prompt the combinations/modifications, the rejections

are merely improper hindsight reconstruction of applicants' own invention using applicants' own disclosure. The Court of Appeals for the Federal Circuit has steadfastly criticized such modification. "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). See also, e.g., In re Laskowski, 871 F.2d 115, 10 USPQ 2d 1397 (Fed. Cir. 1989); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985); In re Grabiak, 769 F.2d 729, 731, 226 USPQ 870, 872 (Fed. Cir. 1985); In re Sernaker, 701 F.2d 989, 994, 217 USPQ 1, 5 (Fed. Cir. 1983).

Accordingly, it is submitted that the present invention as claimed is readily distinguishable from the prior art references for the reasons indicated. Applicants' invention is not disclosed by any of the prior art and there is no fair basis for alleging that applicants' invention is obvious in regard to such prior art. If the invention was obvious, it would have been adopted before in view of its advantages.

Allowable Subject Matter

The Examiner indicates that claims 25-34 and 36 and objected to as being dependent upon a rejected based claim but would be allowable if rewritten in independent form including all the limitations of the base claim and intervening claims. The Examiner admits the prior art fails to suggest a self diagnostic testing means electrically coupled to the electrical power means and to the EL panel stripe for verifying operational conditions of the lighting system including the detection of an electrical short circuit and an electrical open circuit of an EL panel coupled to the control means as defined and set forth in the claims. Accordingly, it seems the Examiner's statements of reasoning for the allowable subject matter required that an electroluminescent (EL) panel is an essential element of Applicants' invention and distinguishes Applicants' invention both patentably and technically from the various illumination devices of Kim et al., Gross et al. and Herzog references. Claim 25 is rewritten above in independent form as new claim 37 which includes limitations of the base claim 18 from which it depends. Claim 36 is rewritten above in independent form as new claim 38 and includes the limitations of the base claim 35 from which it depends.

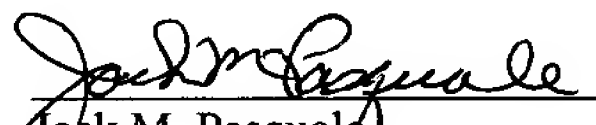
In sum, it is submitted that the present invention as claimed is readily distinguishable from the applied references for the reasons indicated. Applicants' invention is not disclosed by the applied references and there is no fair basis for alleging that applicants' invention is obvious in regard to them. If the invention was obvious, it would have been adopted before in view of its advantages.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all the claims are allowable and early favorable action is earnestly solicited. The Examiner is invited to call Applicants' attorney if any questions remain following review of this response.

Respectfully submitted,

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